20 PRELIMINARY FINDINGS FROM IX KUKU'IL, TOLEDO DISTRICT, BELIZE

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Ix Kuku'il is a small ancient Maya community situated in the southern foothills of the Maya Mountains in the Toledo District of Belize. This paper discusses the preliminary findings from survey and test unit excavations that were conducted at Ix Kuku'il between 2013 and 2015. To date, eight administrative areas and 59 settlement groups of varied social status, based on architectural complexity and elaboration and artifact assemblages, have been identified at Ix Kuku'il. Survey findings also documented natural features on the landscape including freshwater springs and caves, which may have played a role in the settlement decisions. Relative dating based on regional ceramic typologies indicate that Ix Kuku'il was occupied primarily during the Late Classic (AD 600 - 800).

Introduction

In 2011, the Uxbenká Archaeological Project (UAP) obtained Light Detection And Ranging (LiDAR) data, which creates high-resolution 3D terrain models and is able to visualize ground surfaces beneath tropical vegetation. This cutting-edge technology allows us to detect larger architectural groups, small residential platforms, landscape modifications and other aspects of the built environment undertaken by the ancient Maya (Chase et al. 2011). LiDAR allows researchers to rapidly detect spatial patterns of the built environment that are impossible to detect with other remote sensing techniques, and within limitations can replace many aspects of traditional pedestrian survey in dense tropical forests (Prufer et al. 2015). While our 135 km^2 of LiDAR data was focused on Uxbenká, we also identified a large plaza with an eastern triadic building located 7 km to the northwest of the Uxbenká site core. In 2012, a one-day reconnaissance of the site documented the plaza with a triadic building; the locals called this place "Ix Kuku'il". The reconnaissance of Ix Kuku'il recorded a 100 m circular plaza with eight buildings situated around a central plaza. A 10 m tall eastern triadic building and uncarved stela suggested that this site was an independent political center rather than an outlier of Uxbenká.

Ix Kuku'il is a small Maya center located in the southern foothills of the Maya Mountains, in the Toledo District of Belize. Survey in 2013 focused on documenting the extent of the architectural remains of Ix Kuku'il while fieldwork in 2014 and 2015 emphasized understanding the development and occupational history of Ix Kuku'il through test unit excavations among settlement groups and larger architectural groups across the site. This paper discusses the preliminary findings from fieldwork at Ix Kuku'il from 2013-2015.

Regional Background

Relatively little archaeological research has been carried out in the Toledo District compared to the rest of the Maya region over the past century. Scholars including Thomas Gann, Norman Hammond, Richard Leventhal, Heather McKillop, Geoff Braswell, Keith Prufer, and Claire Novotny have worked at southern Belizean sites including Pusilha, Lubaantun, Nimli Punit, Xnaheb, Wild Cane Cay, Payne's Creek, Uxbenká, and Aguacate. The Toledo District is geographically circumscribed by the Maya Mountains to the north and northwest, pine barrens to the northeast, the Caribbean Sea to the east, and swampy *bajos* to the south. The largest Maya centers in the area include Pusilhá, Uxbenká, Lubaantun and Nimli Punit, which are located along a fertile upland ridge running on a SW to NE axis (Figure 1). These sites share carved stela traditions, association with distant centers, and comparable architectural styles and construction materials, suggesting similar histories. However, differences in ceramic assemblages and site core architectural density have been suggested by Braswell, Prufer, and others to indicate a general lack of political affiliation between them (Braswell and Prufer 2009).

The region is known for rich agricultural lands that are highly productive due to a 25 km long natural formation consisting of interbedded

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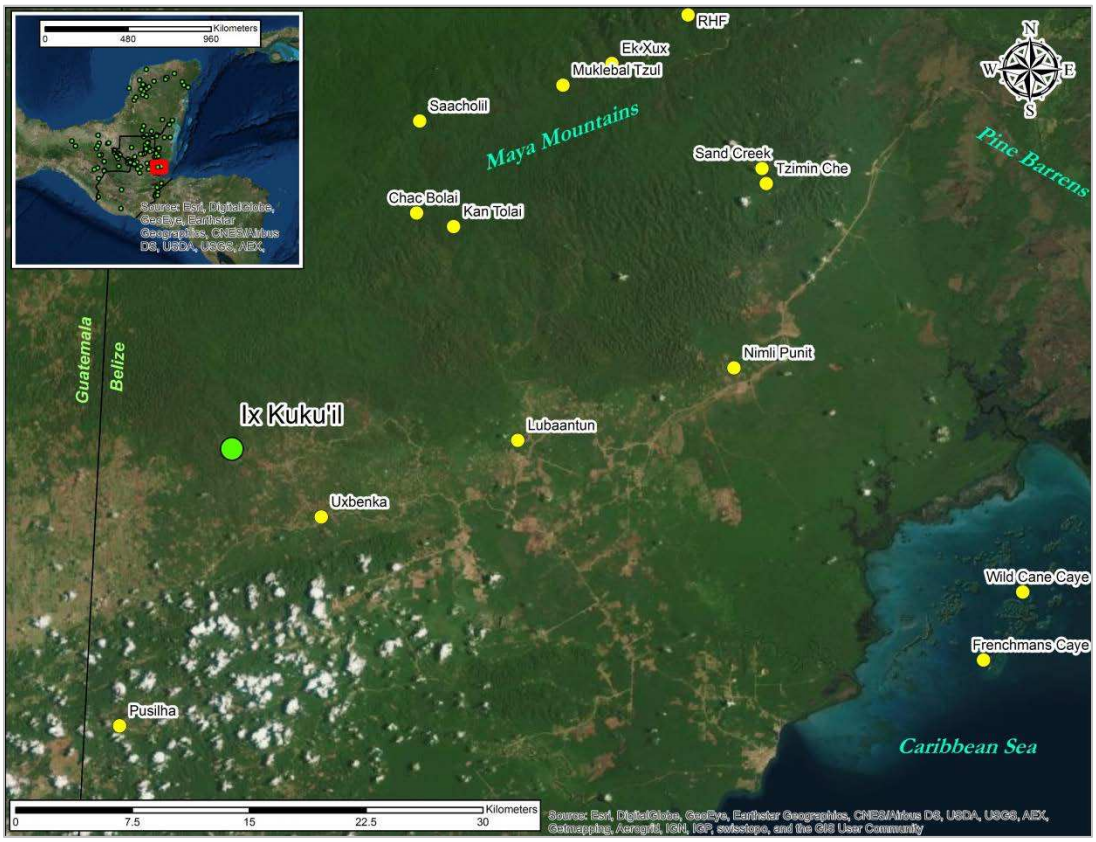

Figure 1. A regional map of archaeological sites in the Toledo District with the location of Ix Kuku'il emphasized. The inset map shows the location of large map compared to major centers in the Maya region.

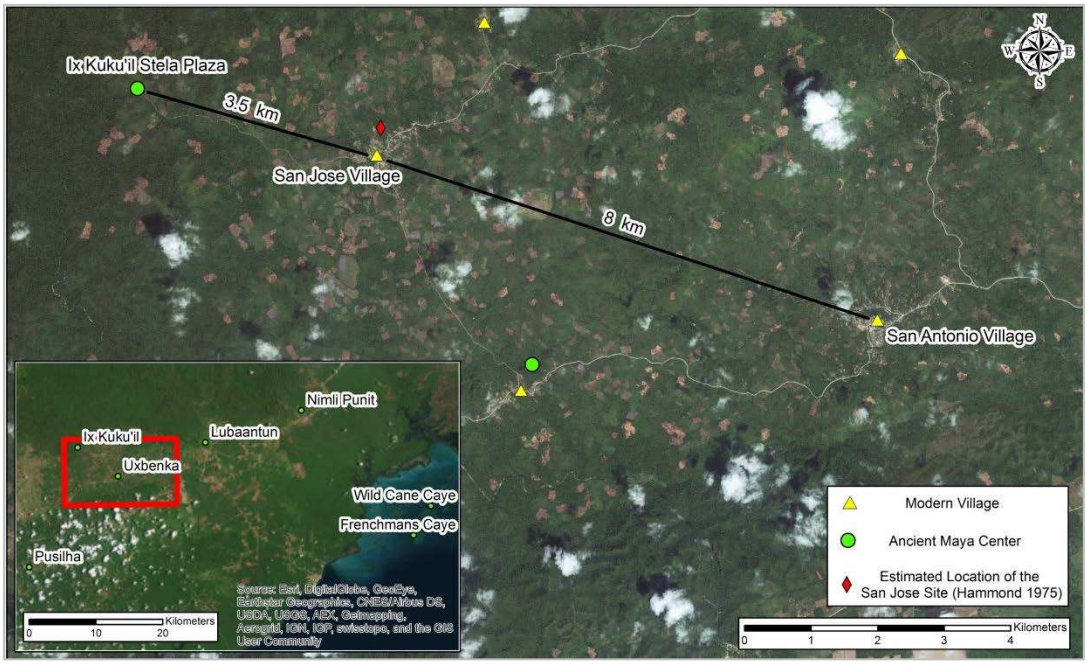

Figure 2. The estimated location of Hammond's (1975) San Jose site, based on descriptions, in comparison to the location of the Ix Kuku'il Stela Plaza and the modern villages of San Jose, Santa Cruz, and San Antonio, Toledo District, Belize.

Tertiary mudstones, shales, and sandstones known as the Sepur Formation. The Sepur Formation contains pockets of Cretaceous Campur Formation limestones (Keller et al. 2003). This regional geologic formation, referred to as the Toledo Beds (Wright et al. 1959), covers 220 km^2 and encompasses three of the four major Maya centers in Toledo: Lubaantun, Nimli Punit, and Uxbenká. This sub-region of Toledo is a large cacao producer today (Hammond 1975; Wright et al. 1959) and likely was in the past as well, and allows for high crop yields (Prufer and Hurst 2007). These factors likely played a role in the ancient Maya selecting this area for their communities.

Archaeological Background of Ix Kuku'il

While the discovery of Ix Kuku'il is not novel to the indigenous population of San Jose village, archaeologists have only mentioned the site a handful of times prior to the UAP's research initiative at Ix Kuku'il. In the mid-1980s, Richard Leventhal's team performed a regional archaeological survey in Toledo. According to a local informant from San Jose village, Leventhal's team visited the Stela Plaza (Group A) at Ix Kuku'il during a one-day reconnaissance. "Ich Cucuhil" appears on several maps from the early 1990s in discussions of Leventhal's research at Uxbenká (Leventhal 1990, 1992; Jamison et al. 1991). However, aside from these few maps, Ix Kuku'il was undiscussed in the regional archaeological literature until 2013 when preliminary survey was conducted to test the extent of the site.

While Ix Kuku'il's Stela Plaza was not documented by archaeologists until the mid-1980s, ancient Maya residential areas associated with Ix Kuku'il were noted by Norman Hammond in the mid-1970s during his survey of archaeological sites in the Toledo district. In an appendix in his *Lubaantun* volume, Hammond (1975) briefly describes a small site called "San Jose" located 8 km northwest of San Antonio and just north of the modern village of San Jose (Hawiia), Toledo District (Figure 2). This site is situated at an elevation of 200-300 m in the foothills of the San Antonio Valley. Hammond describes the San Jose site as a hilltop platform measuring 30 m long by 15 m wide, with a pyramid 3-4 m in height situated on a lower platform that is 1-2 m in height (Hammond 1975). This is likely a residential area, similar to those seen on the eastern side of Ix Kuku'il, as discussed below. His description does not match that of any of the major architectural groups documented thus far at Ix Kuku'il (see Thompson and Fries 2014). Rather, the San Jose site Hammond visited was a settlement group associated with the larger center of Ix Kuku'il. The distance of this documented settlement group to the Stela Plaza inform the extent of the ancient Maya center.

Community Cooperation in Archaeological Objectives

Prior to Richard Leventhal's documentation of Ix Kuku'il, the Green Creek Farmer's Cooperative (GCFC), a local farming cooperative group has helped protect the site from looting activity since 1977. The GCFC communally leased a large plot of land to the northwest of San Jose village for cacao orchards, *milpas*, and household gardens. Cacao groves were planted shortly after the establishment of the communal land and are still present along the road that leads to the Ix Kuku'il Stela Plaza. According to their leadership, Ix Kuku'il was given its name as one "faces the cacao" as they travel from San Jose village to the Stela Plaza, as cacao groves are located on land between these two areas. The GCFC continues to promote the protection of the site. The UAPs research team at Ix Kuku'il worked together with the San Jose village leadership, including the village chairman, and the leaders of the GCFC during survey and excavations at Ix Kuku'il following the model established in Santa Cruz as part of the Uxbenká Archaeological Project.

Survey Findings

Using the LiDAR data, we created a predictive model for the location of archaeological sites at Uxbenká (see Thompson and Prufer 2015). This predictive model was employed during survey at Ix Kuku'il and allowed for efficient and effective survey. Following the UAP protocol, large architectural groups that did not conform to typical Maya housemound types were designated as "Groups", indicating areas of administrative or civic function. Small buildings situated around a

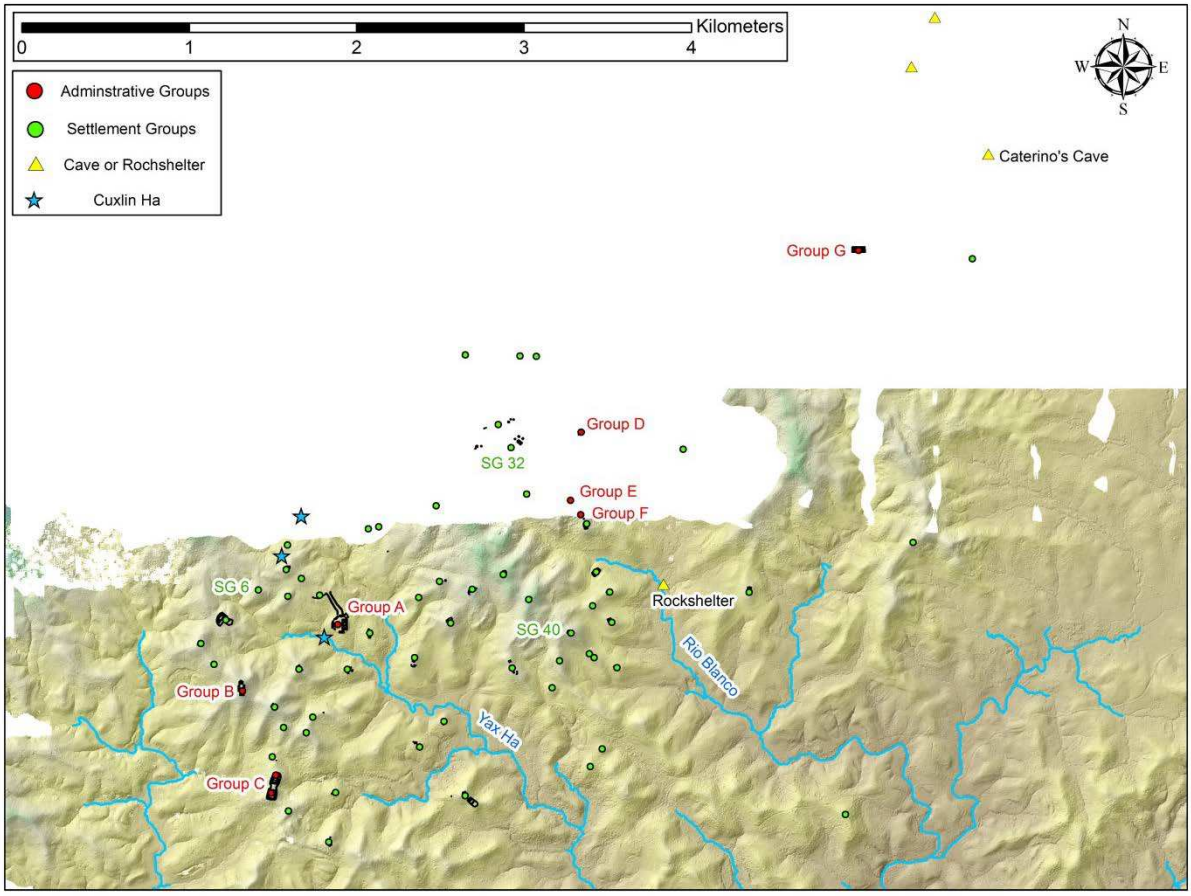

Figure 3. The extent of know settlement associated with Ix Kuku'il. Specific features discussed in the text are emphasized including archaeological sites, cuxlin ha, rockshelters, and caves.

central (formal or informal) plaza, a configuration typical of ancient Maya households, were designated as "Settlement Groups" (SGs).

Since 2013, eight administrative areas and 59 residential groups have been documented across more than 6 km2 (Figure 3). Survey work has consisted of focused survey in the area surrounding the Stela Plaza. Additional opportunistic "roadside" surveys concentrated on investigating hilltops that had recently been burnt for *milpa* farming adjacent to the road. The primary feature types documented during survey were archaeological sites and landscape features including caves, rockshelters, and *cuxlin ha* (freshwater springs).

Landscape

The Ix Kuku'il landscape is composed of the hilly terrain of the foothills of the Maya Mountains in southern Belize. This area is situated along the northern edge of the Toledo Beds and the transition from mudstones and shales to limestone was apparent across the site. While limestone is present, all of the buildings are constructed of sandstone, with the exception of the 125 m long and 20 m wide *sacbe*, or raised causeway, connected to Group A. The steep terrain creates interwoven streams flowing into larger rivers. Freshwater springs are abundant in the area according to local farmers.

The interspersed karst landscape results in the presence of caves and rockshelters in the area. Caves and rockshelters were commonly used by the ancient Maya as sacred spaces that acted as portals into the underworld (Prufer and Brady 2005). One rockshelter, situated 2 km to the west of Group A (Figure 3), is located upslope of the Rio Blanco directly adjacent to a modern footpath. The rockshelter was

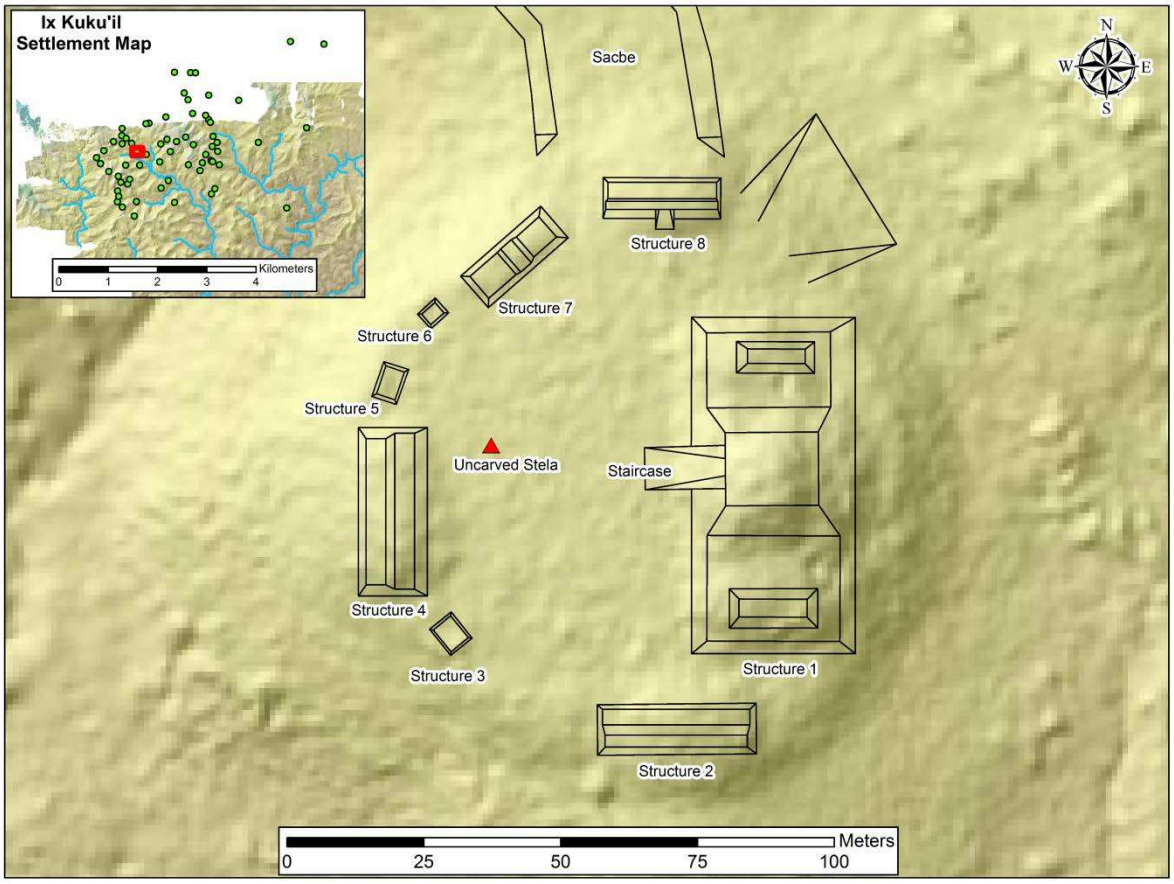

Figure 4. A plan view of Ix Kuku'il Stela Plaza (Group A), which includes notable features such as an eastern triadic building, an uncarved stela, a *sacbe*, and a *cuxlin ha*.

composed of a natural fracture in the bedrock and is located along the edge of the outcrop. Scattered across the surface within the rockshelter were a stone bark beater, ceramics, and lithics. The presence of a bark beater suggests that possibility of paper production and utilization at Ix Kuku'il. In addition to the rockshelter, a cave feature named Caterino's Cave (Figure 3), located 4.8 km to the northeast of the Stela Plaza, contained the remains of a Tepeu 2 vessel dating to the Late Classic (Thompson and Fries 2014). A cave feature was documented beneath one of the buildings in SG 36 and several other caves have been documented to the north, as the bedrock transitions from mudstones to karst limestone. Caves and rockshelters are abundant across the area but have not been more widely documented, as survey to date has focused on recording architectural features and the extent of the Ix Kuku'il site.

Perennial water is available across the landscape due to the presence of large rivers with runoff from the Maya Mountains, and *cuxlin ha*. The major rivers that flow through the area are the Yax Ha, which runs close to the Stela Plaza, and the Rio Blanco, which is located on the eastern portion of the site. These rivers eventually merge 5.5 km south of Ix Kuku'il, prior to entering into Ho Keb'al Ha cave and re-emerging in Blue Creek village on the southern side of the "Rock Patch", a rugged limestone relief feature. To date three *cuxlin ha* have been documented in the area surrounding Ix Kuku'il (Figure 3), though it is likely that more freshwater springs exist. The locations of these natural features undoubtedly played a role in the settlement decisions of the ancient Maya.

Ix Kuku'il was initially thought to be an outlying community associated with Uxbenká. However, the extensive settlement across more than 6 km^2 and variations in architectural

complexity suggest various levels of social strata were present at Ix Kuku'il and that it was likely an independent polity during the Late Classic Period. Continued survey of the area will likely reveal additional settlement groups as well as significant natural features across the landscape that shaped the settlement patterns and socio-political decision-making of ancient Maya communities at Ix Kuku'il.

Non-Residential Architecture

Ix Kuku'il's main site core, Group A or the Stela Plaza, contains eight structures situated around a central plaza with a triadic pyramid situated on the eastern edge (Figure 4). The circular plaza area is 100 m in diameter with a 125 m long and 20 m wide limestone causeway extending to the north of the group. A single uncarved stela measuring 4.2 m in length was found on the western side of the plaza. While there is no evidence of writing on the stela today, it might originally have been carved or painted.

Unlike most administrative centers in the Maya region, the Stela Plaza at Ix Kuku'il is located on one of the lowest hills in the area, with an elevation of 325 m. Sites located on the hills surrounding the Stela Plaza peer down into the plaza. A tributary to the Yax Ha river winds around the base on the plaza, and a *cuxlin ha* (Figure 3) would have allowed year round access to water. The seven additional administrative areas are spread out across the landscape surrounding Ix Kuku'il (Figure 3). The architectural complexity of these groups varies greatly. Group B consists of four buildings situated around a central plaza, while Groups D and F are composed of a series of large, low lying platforms housing several smaller platforms with complex and restricted entrances (Figure 5a, 5b, 5c). Group E is located 1.5 km to the northeast of the Stela Plaza and is a single building containing the only documented masonry walls at Ix Kuku'il, which are uncommon among southern Belize sites (Braswell and Prufer 2009). Group G is composed of four buildings situated around a central plaza and sitting on top of a U-shaped platform. A possible narrow ballcourt is present at Group G. Group H consists of a series of modified, flattened hilltops with stone facing composed of three tiers of flattened hills with two structures. Combined, these tiers made the base of the structure appear to be more than 20 m tall, suggesting massive labor investments into the built environment.

Several trends are apparent among the non-residential architectural complexes at Ix Kuku'il: (a) People around Ix Kuku'il employed the same "southern Belize façade" found in other regional sites, creating the appearance of large structures by facing hillslopes with stone (Braswell and Prufer 2009); (b) as at other southern Belize sites, structures at Ix Kuku'il generally lack masonry superstructures or evidence of the corbel vaults; (c) architecture is situated exclusively on hilltops and saddles, consistent with the our settlement model for the Rio Blanco Valley (Thompson and Prufer 2015); (d) site organization is either a series of large, low-lying platforms composing a single group (e.g. Group D) or an open plaza with buildings surrounding it (e.g. Group B); (e) hilltops were frequently heavily modified (flattened) to create larger areas for occupation (Prufer et al. 2015); (f) restricted access to central precints is present in both large administrative areas and in some of the settlement groups. This pattern of widely separated administrative groups may suggest a heterarchical distribution of power across the geopolitical landscape at Ix Kuku'il.

Residential Architecture

The 59 residential groups documented at Ix Kuku'il vary greatly in their size, degree of architectural elaboration, and location. Settlements range from a single building to groups of up to nine structures. Some residential groups are composed of small platforms while others consist of several layered platforms with staircases, patios, and bench features. The location of settlement groups is not directly related to their architectural complexity or sociopolitical status as larger settlement groups with more buildings with elaborated architectural features such as staircases and benches are dispersed across the site. For example, one of the largest settlements groups SG 32, contains an outlying temple/shrine and may have been occupied by local elites based on the presence of larger buildings indicating greater labor investment, and artifacts such in

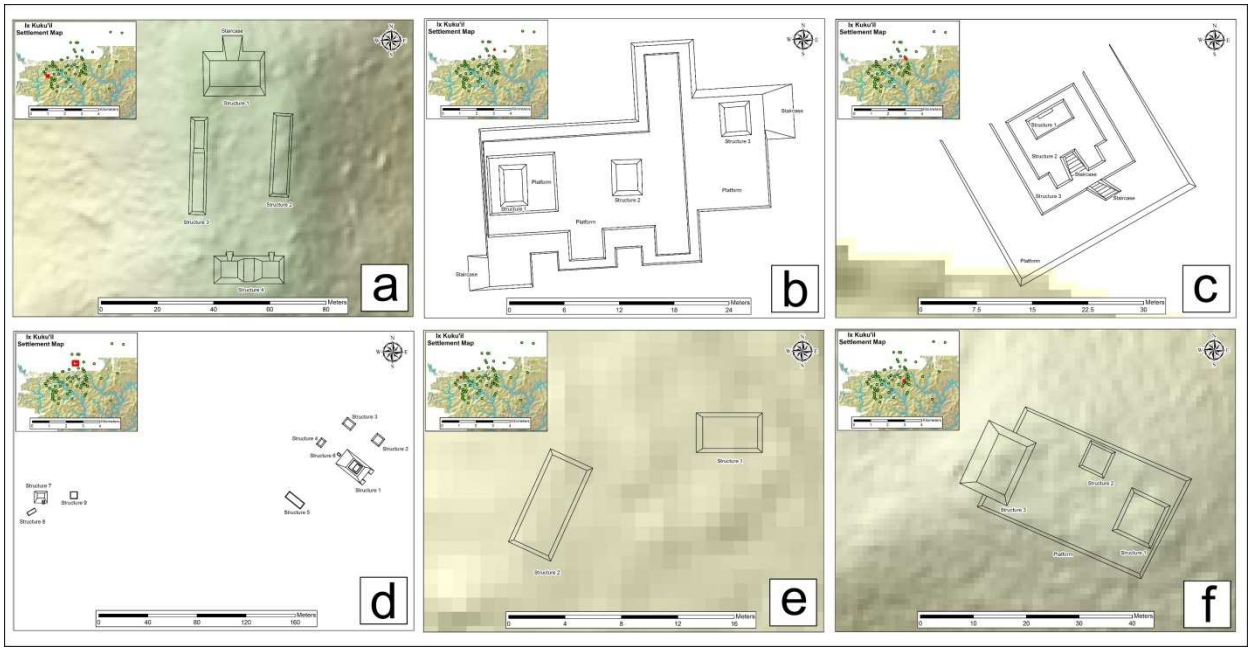

Figure 5. Plan view maps showing different architectural layouts, elaborations, and complexity across the geopolitical landscape of Ix Kuku'il. Specific administrative areas discussed throughout the text include (a) Group B; (b) Group D; and (c) Group F; while settlement groups discussed in the text include (d) SG 32; (e) SG 6; and (f) SG 40. Inset maps show the location of each site in comparison to the larger settlement system.

domestic rituals such as speleothems, figurines, and censers. SG 32 is situated 1.5 km to the northwest of Group A, while SG 6 is located merely 0.5 km to the northwest of Group A, contains two small buildings, and was likely occupied by lower status individuals (Figure 5d and 5e) due to the lack of architectural investment, and dearth of status-enhancing items in conjunction with abundance of utilitarian pottery.

The spatial layout of residential areas varies across the geopolitical landscape. A large ridge divides the site, making it impossible to see the Stela plaza from the east. The settlement groups on the eastern side of the ridge have similar architectural arrangements that consist of several building platforms situated (formally or informally) around a central plaza on a flattened hilltop platform (e.g. SG 40; Figure 5f). The architectural arrangements of settlement groups in the northern and western areas of the extant settlement do not follow this trend. This suggests that architectural arrangements and spatial layouts of residential areas vary across the site and may be affiliated with different social or lineage groups.

Although these residential groups are spread across an area of more than 6 km2, they exhibit several common trends: (a) almost all of the hilltops show evidence of modification to flatten the hill to create a large living area; (b) some groups consist of only two low platforms arranged in an "L" shape; we suggest that the remainder of the perimeter of the hill may have had perishable superstructures with earthen foundations; (c) many of the eastern groups have three to four structures arranged around a central plaza and placed atop a platform; (d) architecture was situated almost exclusively on hilltops and saddles, consistent with the predictive model.

Excavation Findings

Initial excavations at Ix Kuku'il focused on chronology building through small test units located in plazas and in building platforms. Plaza units were situated adjacent to building platforms with the goal of obtaining datable materials (i.e., charcoal) from plaster floors and caches associated with the construction of the building platforms. However, in-structure units tend to identify construction sequences and

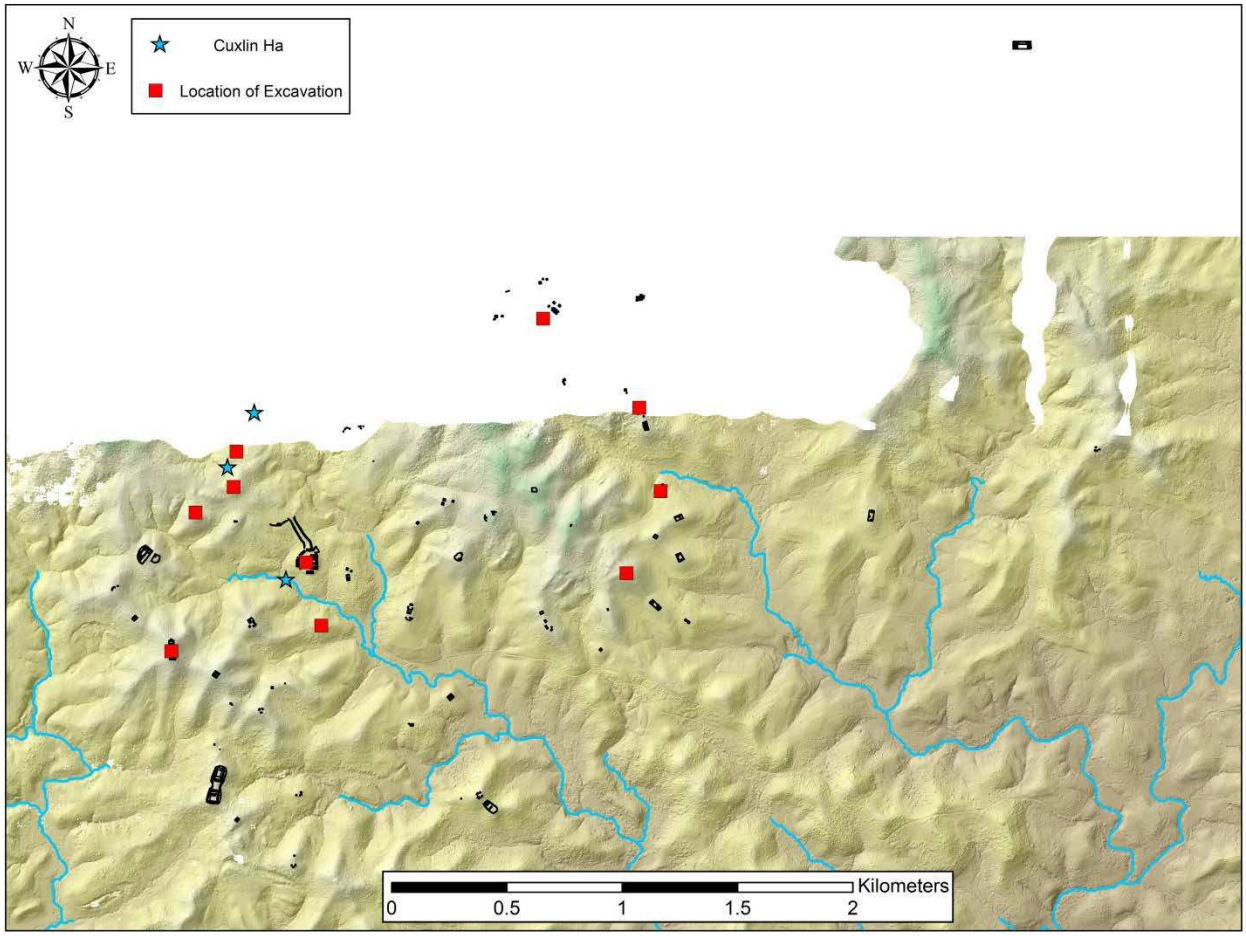

Figure 6. The locations of architectural groups that have undergone archaeological test unit excavations during the 2014 and 2015 field seasons.

artifacts more frequently than plaza excavations among hinterland households of Toledo. Therefore, to accommodate for time and the desire to obtain as much information as possible, excavations occurred both in plazas and in building platforms. To date, archaeological excavations have occurred in ten groups (Figure 6). These locations were selected for test units as they are dispersed across the site, and have varying degrees of architectural complexity. Therefore, they could provide evidence for the development and occupational history of Ix Kuku'il, as well as shedding light on the various aspects of community and status across the landscape.

All excavations in the plaza revealed shallow bedrock with few construction phases. Two plaster floors were documented in the plaza of Group A. Among the plaster floors were an abundance of *jute* shells, possibly used to create the lime plaster. Eroded plaster floors were identified in some settlement groups, while no plaster floors were documented in any of the smaller settlement groups such as SG 6. The lack of intact plaster floors in small households is consistent with data from Uxbenká. This is likely due in part to the highly acidic soils, as well as hundreds of years of bioturbation, and modern farming that combine to result in the breakdown of these fragile and shallow ancient floors. In addition to plaster floors, the presence of packed cobble floors was identified at several of the settlement groups (which may indicate longer periods of occupation than simple dirt floors due to higher labor investment. Excavations in building platforms suggest multiple construction phases. For example, at SG 51 several walls and cobble floors were

documented above a burial feature in the floor of a household. Likewise, at Group F a lip-to-lip cache feature was placed in an existing floor (Thompson 2015) prior to the abandonment of the group.

The use of different colored stones for different architectural features was documented at SG 51. The patio of the building has starkly white stones compared to the rest of the platform while the stones used as the base and capstone for the burial feature were distinctly yellow. Additionally, a lip-to-lip cache of red ceramic vessels was placed over the pelvis of the individual (Thompson 2016). This suggests the intentional use of different colored stones for specific architectural features at SG 51.

In addition to documenting architectural complexity across the site, excavations at Ix Kuku'il revealed the presence of an obsidian workshop at SG 16. Within a 1x2m unit, a variety of obsidian was collected including debitage, flakes, prismatic blades, and cores; the diversity in obsidian is uncommon among residential groups at Uxbenká and therefore likely represents an obsidian workshop or reduction area. SG 16 is located just south of Group A, and the close proximity to the administrative area may explain why this household contained an obsidian workshop.

Excavations at Ix Kuku'il also focused on building a chronological sequence for the site. Charcoal samples were collected whenever possible for AMS radiocarbon dating and ceramics from Ix Kuku'il were used for relative dating. Ceramic types were identified using the Uxbenká ceramic typology (Jordan 2014), as Uxbenká is the closest ancient Maya center and likely had ties to Ix Kuku'il. Ceramics identified among architectural features included Better than Puluacax, Puluacax, Chacluum Black, Remate Red, and Turneffe, all of which date to the Late or Late/Terminal Classic. A handful of sherds appear to be Early Classic in style based on rim form (Thompson and Fries 2014). Few polychrome sherds were found among the administrative or residential areas; this is likely due to a biased sampling strategy that targeted plaza areas as well as in-structure excavations among hinterland households.

The ten test unit excavations at Ix Kuku'il suggest that Ix Kuku'il was briefly occupied primarily during the Late Classic based on the lack of deep construction sequences present at other, longer occupied Maya sites. Plaza unit excavations revealed little in regards to datable contexts, archaeological materials, or construction phases compared to in-structure excavations. The excavations yielded information on burial practices, caching events, and production at Ix Kuku'il. Continued excavations in the future will focus on refining the occupational history of Ix Kuku'il and understanding the developmental history of the ancient Maya center.

Conclusions

The preliminary findings from the first three seasons of field work at Ix Kuku'il indicate an extensive settlement system, with high degrees of architectural elaboration and complexity among both residential and administrative areas. The array of artifact classes and types indicate that a full spectrum of social strata were present at this ancient community. Several administrative areas were located across the site, representing a highly diverse geospatial landscape. Ix Kuku'il occupants utilized both local and long distance trade goods and were connected with the greater Maya region through trade networks, as evidenced by the presence of obsidian, jade, and bark beaters.

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